

Employability enhancement through formal and informal learning

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Employability Enhancement Through Formal and Informal Learning
An Empirical Study among Dutch Non-academic University Staff Members

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Abstract

Although learning is generally perceived as a way to improve employees' current job performance, so far no research has been conducted to explore the possible relationships between formal and informal learning, on the one hand, and employability, on the other. Though contemporary views stress the importance of the job as a powerful learning site, considerable research evidence underpinning these views is lacking. This paper goes into the impact of formal and informal learning upon employability. The influence of employee characteristics and organizational factors is also taken into account. An e-questionnaire was used to collect data among 215 Dutch non-academic university staff members. Our findings emphasize the necessity of Human Resource Development strategies that encompass a mix of formal and informal learning opportunities. Especially participation in networks appears to be an important predictor for employability. With the outcomes of this study we aim to contribute to the further development of theoretical insights regarding employability enhancement through learning possibilities embedded in the workplace. It seems that strategies that focus exclusively on enhancing informal on-the-job learning should not be encouraged. Our study is limited to one context and further research is required to investigate the generalisability of the findings to other occupations and/or countries.

Keywords employability, **formal learning**, informal learning

Paper type Research paper

Employability and Learning; Conceptualisation and Perspectives

Lifelong employability is rapidly replacing the notion of lifetime employment within the same organization (Forrier and Sels, 2003). The concept of lifelong employability implies that individual employees become more accountable for investments in their own human capital, and hence for their job security, learning and future career development. Learning becomes an important endeavour for all workers throughout their entire careers. In this respect, both formal and informal learning are seen as cornerstones for the enhancement of employability.

This paper focuses on exploring the relationship between learning and employability, and emphasizes the contribution of informal learning, in this regard. In addition, attention is paid to the impact of employee characteristics and organizational factors. The possible contribution of informal learning to employability has not gained any empirical attention up to now. Although research into informal learning has become quite popular over the past years, in general, most studies focus on micro aspects of learning (e.g., features of the learning process), and immediate learning outcomes (see for example Koopman *et al.*, 2006; Lohman, 2005). Moreover, most studies use qualitative research designs with rather modest numbers of respondents. In this contribution a quantitative approach with a considerable number of respondents has been used, and is aimed at enhancing our insight into the contributions of formal and informal learning upon employability.

Employability

Defining employability is complicated by the co-existence of different perceptions of what it means to be employable. Van der Heijde and Van der Heijden (2006) defined employability, or career potential, as “the continuous fulfilling, acquiring or creating of work through the optimal use of competencies” (p. 453). Their definition is consistent with the definition of Forrier and Sels (2003, p. 106) who characterized the concept as “the chance for employment on the internal or external labour market,” and is in line with the conceptualization by Fugate *et al.* (2004), who defined it as “a form of work-specific active adaptability that enables workers to identify and realize career opportunities.” All

previously mentioned conceptualizations share that employability implies a permanent process of acquisition and fulfilment of employment, within or outside the current organization, today, and in the future.

Van der Heijde and Van der Heijden (2006), in their previous work on employability, developed a measurement instrument which combines domain-specific expertise (Van der Heijden, 2000) with more generic competences. Previous research in various settings, among professionals working in different occupations, supported the psychometric qualities of the measurement (see Van der Heijden, 2005). The instrument consists of the following five dimensions of employability: (1) *occupational expertise*, i.e. the expertise needed to perform the various tasks and responsibilities of a job adequately; (2) *anticipation and optimization*, i.e. preparing for and adapting to future changes in a personal and creative manner, and striving for the best possible results; (3) *personal flexibility*, i.e. the capacity to easily adapt to all kinds of changes in the internal and external labour market that do not pertain to one's immediate job domain; (4) *corporate sense*, i.e. the participation and performance in different work groups, including organizations, teams, occupational communities and other networks, which involves sharing responsibilities, knowledge, experiences, feelings, credits, failures, goals, etc.; and (5) *balance*, i.e. compromising between opposing employers' interests as well as one's own opposing work, career, and private interests (employee), and between employers' and employees' interests.

The second and third dimension are flexibility dimensions, discernible as one proactive/creative variant, and one more passive/adaptive variant. Corporate sense represents the requisite increase in social competence. The dimension of balance is added, taking into account the different elements of employability that are sometimes hard to unite, and which require fine-tuning, such as current job goals and career goals. Organizations increasingly seem to ask for highly committed, and at the same time highly flexible employees (Legge, 1995). This so-called management paradox can correspondingly be found within the tension between the need for a high level of specific expertise versus the need for de-specialization, i.e. a broader employability. Moreover, the interests and tensions between work-related, career-related, and private areas are increasingly complex and should be balanced in order to ensure lifelong employability.

(In)formal Learning in the Workplace

Until the beginning of the last decade, learning was usually equated with formal classroom-based training. Though the effect of *formal* training on employee's performance is sometimes doubtful, due to the lack of sufficient transfer to the workplace (see for example the work of Baldwin and Ford, 1988), formal training remains an important strategy for organizations to ensure their employees' competencies. Moreover, an important advantage of formal learning lies in the fact that it can be formally demonstrated, and used as a Human Resource measure predicting workers' employability.

Informal learning has always been valuable for maintaining and/or increasing employees' performance, but since the nineties its importance even expanded since then it became clear that most learning does not occur in formal learning situations, yet mainly informally, both in and outside the workplace (Marsick, 2006). A Canadian survey conducted by Livingstone and Eichler (2005) showed that 82% of the respondents is involved in some form of job-related informal learning, with an average of six hours weekly. Similar findings were reported in a study among Dutch employees (Borghans *et al.*, 2006). Apart from outcomes as regards the time dedicated to informal learning, Borghans and associates reported the unique contribution of informal learning to job-relevant competencies. A similar outcome has been reported by other researchers as well. For example, Lave and Wenger (1991) examined the acquisition of tacit knowledge, which is embedded in the work, and that only can be mastered by active participation in the workplace itself.

How can informal learning be defined? Informal learning includes incidental learning, i.e. learning which occurs as a by-product of some other activity, and which occurs, even although employees are not always conscious of it, and which is not always intentionally searched for. Marsick and Volpe (1999) proposed a conceptualization that is up till now acknowledged by many scholars. They interpreted the concept by pointing to six characteristics: (1) integrated with work and daily routine; (2) triggered by an internal or external jolt; (3) not highly conscious; (4) often haphazard and influenced by change; (5) an inductive process of reflection and action; and (6) linked to the learning by others.

How can informal learning be encouraged? Although much informal learning happens spontaneously and sometimes even unconscious for the learners themselves, creating appropriate

workplace conditions could increase the amount, quality and outcomes of informal learning. The following three sections discuss different factors that encourage informal learning in the workplace: (1) interaction with one's supervisor (Leader-Member eXchange), (2) the learning value of the job, and (3) internal and external networks, respectively.

Interaction with One's Supervisor

In the employees' social context supervisors occupy an important position, which is elaborated in Leader-Member eXchange (LMX) models, representing a major theoretical and empirical approach to organizational leadership (Basu and Green, 1995; Gerstner and Day, 1997; Graen and Uhl-Bien, 1995; Liden *et al.*, 1993; Liden *et al.*, 1997; Wayne and Green, 1993). The core idea behind LMX is that, within work units, different types of relationships develop between leaders and their subordinates, or members. Managers and supervisors are thought to develop close relationships, and have high quality exchanges, with only a few subordinates.

The central theoretical premise behind LMX models is that roles that have developed beyond the formal descriptions of the employment contract (in-group) will result in more positive consequences for members compared with roles that are strictly based on the employment contract requirements (out-group) (Liden *et al.*, 1997). Employees who receive more information and support from their leader, and who engage in tasks that require challenge and responsibility, are expected to have more positive work attitudes, and to engage in more positive behaviours compared with employees whose support is limited to what is required by the employment contract. Howell and Hall-Meranda (1999), in their longitudinal study, have found high-quality LMX to be positively related to follower performance. LMX appears also to be influential for the nature of employee's work activities. More specifically, LMX has shown to be positively associated with decision-making, communication, and liaison activities (Liden and Graen, 1980).

LMX has also been investigated as a predictor of innovative informal learning, defined as "... the extent to which organisational members introduce ideas, procedures or artefacts that are new to the organisation, and the extent to which they engage in activities that may lead to introduction of such ideas, procedures, and artefacts" (Basu, 1991, p.27). It has been found that the quality of LMX is

positively related to innovative behaviour (Basu, 1991; Basu and Green, 1997). Similarly, Van der Klink, Gielen and Nauta (2001), and Hughes (2004) have demonstrated the predictive validity of a high quality supervisor-subordinate relationship in the light of employees' learning behaviour in the workplace, with respect to, for instance, awareness, understanding and commitment to work processes, policies and future innovations.

Concluding, within work units, different types of relationships develop between leaders and their followers. Subordinates who receive sufficient information and support from their leaders, and who engage in tasks that require challenge and responsibility are expected to have more positive work attitudes, and engage in more positive work behaviours compared with subordinates who receive less support (Bakker and Demerouti, 2007; Basu and Green, 1997; Graen and Uhl-Bien, 1995; Liden, Sparrowe and Wayne, 1997). Therefore, and in the light of our theoretical framework, we assume that high-quality LMX is positively associated with a worker's employability.

Learning Value of the Job

The learning value of the job is defined as "a job's value as a nutrient for further professional development" (Boerlijst *et al.*, 1993, p. 57). It is determined by the nature of the work as characterized by job assignments, and the degree of challenge and growth these assignments provide. More specifically, it deals with the extent to which occupational knowledge and skills can be used and enlarged in one's job position. Opportunities for informal learning and maintaining and enhancing one's employability or 'vocational currency' (Billet, 2001, p.32) throughout working life is determined by the kind of activities in which employees engage, and also by the interactions with colleagues, and by the amount of sources that are afforded by the workplace.

Longitudinal analyses have revealed that employee flexibility is positively influenced by the complexity of the job (Kohn and Schooler, 1982). Job content has also been found to influence employee's active orientation (Brousseau, 1978), his or her self-esteem (Kohn and Schooler, 1982), as well as wider areas of psychosocial health (Leitner, 1993). The latter concepts are relevant indicators of workers' employability. Moreover, individuals employed in jobs with a high learning value,

expressed by the demands and challenges they entail, exhibit higher levels of initiative-taking and proactivity (Campbell, 2000; Fay and Frese, 2001; Fay and Kamps, 2006). Initiative-taking and proactivity are suggested to be components of adaptability (Pulakos *et al.*, 2000), which, in turn, contribute to individual and organizational performance (Fay and Frese, 2001), and to career success (Seibert *et al.*, 2001).

Employability can only be attained if workers are provided with important experiences, and if they are able to take advantage of learning new knowledge and skills (see also Van der Heijden and Bakker, under review). This implies that the job should provide frequent opportunities for the practice and extension of the capabilities in question (Pulakos *et al.*, 2000). A challenging work assignment comprises work demands that are optimally broad and complex. They involve novelty and autonomy, and the possibility to explore alternative strategies and solutions (Amabile *et al.*, 1996; Holman and Epitropaki, 2001; Maurer *et al.*, 2003).

Concluding, in our theoretical framework, we assume that the learning value of the job is an important predictor in the light of employability.

Networking

Good networks, that is to say networks providing a high level of social capital, are helpful in obtaining jobs (Burt, 1997), getting promoted (Podolny and Baron, 1997), and having a successful career in general (Bozionelos, 2006; Seibert *et al.*, 2001). Social capital signifies the resources (i.e., information, influence, solidarity) that an individual has at one's disposal, by means of the nature of one's relationship ties with others, and by one's position in a particular social structure (Adler and Kwon, 2002; Coleman, 1988). Social capital is created by interpersonal processes, and enables an employee to achieve certain ends that in its absence would not be possible.

Network resources refer to the totality of the individual's interpersonal ties or networks, excluding the primary mentoring relationship. Therefore, network resources include multiple relationship ties of various strengths with other individuals, *within* or *outside* one's work organization. This includes the individual's developmental network, which consists of all relationship ties that

provide career and psychosocial support, and of which the individual is aware, as well as those relationship ties that assist career progression without the individual's full knowledge or awareness (e.g., the high-level contacts of a peer who belongs to one's developmental network, or the contacts of one's mentor) (Higgins and Kram, 2001).

It was only recently that systematic empirical work demonstrated that network resources within one's work organization are related to the employee's career success within that organisation (Bozionelos, 2003). Although relationships between network resources and career success have been reported before (Cannings, 1988a, 1988b; Gould and Penley, 1984; Peluchette, 1993), network resources did not occupy a pivotal role in those investigations (see also Arthur, 2008; Eby *et al.*, 2003).

The ongoing turmoil in the organizational environment, illustrated by downsizing projects and flattened hierarchies, stresses the importance of a comparative investigation of the effects of access to network resources upon workers' employability. New organizational forms imply a broadened span of control, and an increased workload for all parties involved, leading to a reduced availability of time, and less motivation to provide assistance and support for workers (Russell and Adams, 1997). Given these developments it is of utmost importance to investigate the predictive value of networking in the light of workers' employability enhancement, in order to prevent a further ignorance of this factor.

Organisational Factors Enhancing Learning and Employability

Although learning and the development of competencies are inevitably individual processes (Baitsch, 1998), they are strongly linked to the organizational climate and to social learning processes, which provide ample opportunities for management in working organizations to facilitate the development of workers' further career potential. Recently, more attention has been paid to the issue of how organizations differ according to the conditions and climate encouraging learning.

While most studies focus upon informal learning of specific groups of workers holding similar positions in the organization, Ashton (2004) applied an approach in which all categories of employees within a single organization were involved. This allowed him to gain more in-depth information on how organizational structures shape informal learning. Ashton's findings demonstrated significant

differences between employees depending upon their job. For some groups of employees he found evidence for learning in breadth and depth, while for others learning appeared to be shallow and fragmented. Access to and availability of relevant information, opportunities to learn and to apply learned skills, availability of support and feedback of managers and co-workers, respectively, seemed to be important conditions that influenced both possibilities and content of informal learning experiences.

Skule's (2004) research also added new insights to the impact of organisational factors on primarily informal learning. His work concerned the identification of factors most conducive to learning at work in different sectors, and revealed that organizational size and sector were important predictors for the proportion of learning intensive jobs. Large organizations with over 250 employees offered higher levels of learning intensive jobs. As regards sector, it appeared that oil industry, banking, insurance and commercial services have relatively high levels of learning intensive jobs, while retail, hotels and restaurants appeared to have lower levels of these.

Moreover, Skule (2004) found that access to learning intensive jobs appeared to depend on prior education, with higher levels of education being more often associated with jobs with a rich reservoir of various learning possibilities. Analogously, those who are well equipped in terms of *formal* education continue to enjoy better learning opportunities at work. This mechanism is often referred to as the 'Mathew Principle': "... to those that already had, shall be given" (McCracken and Winterton, 2006, pp.56-58).

The acquisition of competencies in the workplace strongly depends upon the learning climate of a company or, in a smaller sense, a department (Olbert-Bock, 2002). Autonomy as regards work processes, communication, co-operative structures, attitudes of and support by superiors, as well as time for learning, are essential factors influencing learning climate, as has been shown in many studies (e.g. Bergmann *et al.*, 2000; Jenewein *et al.*, 2002). Improving the amount of learning in the workplace is essential as it is, in many occasions, the only place to broaden one's knowledge and skills' base.

In general, vocational education systems do neither provide nor prepare workers for a continuing vocational development. Therefore, an increased emphasis on maintaining the currency of

vocational practice throughout working life has risen, and in many countries lifelong learning policies have been developed (Billett, 2002). Spieß *et al.* (2002), in their longitudinal investigation, compared the learning climate in five companies, by asking both employees and superiors to assess the factors which supported or hindered learning on the job. In those companies portraying the highest employee satisfaction with the learning climate, one offered jobs with tasks which were relevant for learning, and the superiors supported participation and partial autonomy of the employees.

Theoretical Model and Research Questions

As indicated previously, our main interest lies in exploring the relationship between informal learning and employability. As there is a serious lack on empirical research on the added value of informal learning at the workplace, in addition to formal learning, we will examine how formal and informal learning are related to one another, as well as to employability, being the outcome variable. In our theoretical model we assume that both formal and informal learning influence employability. Organizational factors are taken into account as predictors of both the level of formal and informal learning that is available for individual employees. Moreover, employee characteristics that are assumed to be of importance are controlled for in the analyses. In the methodology section some more specific information will be provided.

Our theoretical model emphasises a framework wherein the interplay of organizational factors and employee characteristics are interpreted to be a key factor in explaining the amount, breadth, and depth of formal and informal learning. Previous research, using a diversity of methodologies, has adopted similar models and supports our approach (see for instance Onstenk's (1997) case studies in various types of organizations, the extensive review study by Baldwin and Ford (1988), the quantitative research by Van der Klink and Streumer (2001), the case study conducted by Fuller and Unwin (2005), Erauts's (2004) work on comparing workplace learning paradigms, and the study by Berings and Poell (2005) concerning workplace context-sensitive learning styles.

***** Please insert Figure 1 about here *****

To test the theoretical framework as depicted in Figure 1, the following research questions have been formulated:

- 1) What is the relationship between *formal* and *informal* learning?
- 2) What is the effect of *formal* learning activities on employees' employability?
- 3) What is the effect of *informal* learning activities on employees' employability?
- 4) Are there any differences in the amount of learning activities according to the *department* where the worker is employed, and according to his or her *job position* (see the methodology section for more information)?

Methodology

Sample and Procedure

An on-line electronic survey has been submitted to non-academic staff members of the Open University of the Netherlands (Van der Heijden *et al.*, 2006). Two advantages of on-line surveys comprise, on the one hand, the fact that no data entry failures can be made, and, on the other hand, that one can build in so-called forced entry processes, implying that the respondent can not skip certain questions (preventing missing values).

As regards country, it is important to note that while most career research has taken place in North-America, world-wide contributions using career management models are strongly needed (El-Sawad, Ackers, and Cohen, 2006; Inkson, Khapova, and Parker, 2007; Leong and Hartung, 2000; Mayrhofer, Meyer, Iellatchitch, and Schiffinger, 2004; Stead, 2004). Moreover, given the lack of empirical studies on career development in academic settings using non-academic samples, we aim to partly close a gap in the career literature.

The purpose of this survey was to gain more insight into employees' perceptions on their own employability and its predictors, including various learning-related factors. All survey scales have been previously applied in a large international research project on employability in seven European countries, including the Netherlands (Scholarios *et al.*, 2008; Van der Heijden *et al.*, 2005).

In total 215 employees (107 men and 108 women) responded to the e-questionnaire. Their average age was 46 years ($sd = 8.35$). Their organizational tenure was, on average, 11 years ($sd = 5.43$). 77% of the respondents were older than 40, and 33% were over fifty years old. The majority of the respondents had full-time job contracts (59%). 72 respondents worked at central departments (bureau of the university), 39 held job positions at the university's faculties, 80 were working at the service centre/ICT department, and 26 were working at educational research and consultancy departments. The largest groups of respondents worked in secretarial/clerical jobs (48 respondents), ICT (35 respondents), student support jobs (32 respondents), or management support jobs (29 respondents).

Measures

The following *employee characteristics* (control factors) were included in the analyses: (1) gender (male versus female), (2) age, (3) educational qualification (middle, higher, academic), (4) marital status (single versus married/co-habiting), (5) job tenure, and (6) job contract (full-time versus part-time).

Organizational factors included learning climate, as perceived by the individual employee, and was operationalised by means of two dimensions (Bartram *et al.*, 1993): (1) (lack of) time for learning, and (2) team support. All items were scored using a five-point rating scale ranging from: (1) never true, to (5) always true. Examples of items are: "There is no time to practice the things I need to know how to do" (time for learning), and "If I have a question about my job there is someone available to answer it" (team support). The frequent application of the learning climate measurement instrument in many working organizations across a diversity of countries allows us to conclude that it is an appropriate measure. Results of profound research on the psychometric qualities of the

instrument (Bartram *et al.*, 1993) provide good evidence for its construct validity, and good scale reliabilities (see also Van der Heijden *et al.*, 2005).

Formal job-related learning was measured by asking respondents to fill in the number of days they attended training and/or development programmes, in the past year, in the area of their current job or in adjacent areas. *Other formal learning* was measured by asking respondents to rate the number of days they attended training and/or development programmes, in the past year, in other areas, or aimed at a further personal development, thus not related to their domain-specific expertise or current job.

Four *informal learning factors* were included: (1) interaction with one's supervisor (leader-member exchange), (2) learning value of the job, (3) networking within one's own organization, and (4) networking outside one's own organization. For the first factor, i.e. interaction with one's supervisor, Graen and Uhl-Bien's (1995) psychometrically sound employee version of the Leader-Member eXchange scale (LMX) was used, and all seven items were scored on a five-point rating scale. For the first six items the scale anchors ranged from: (1) not at all, to (5) a great deal, while for the seventh item the scale anchors ranged from: (1) extremely ineffective, to (5) extremely effective. An example item is: "How well do you feel that your manager understands your problems and needs?"

Learning value of the job was measured by means of six items using a six-point rating scale ranging from: (1) strongly disagree, to (6) strongly agree. An example item is: "My job enables me to further develop my talents." The instrument has been carefully tested in previous cross-cultural research and its psychometric qualities are good (Van der Heijden and Bakker, under review; Van der Heijden *et al.*, 2005).

Networking within one's own organization was measured by means of six items (Bozionelos, 2003) using a five-point rating scale ranging from: (1) not at all, to (5) to a very large extent. An example item is: "There are individuals within the organization I currently work for with whom I exchange information concerning what is happening in the organization." The six-item scale that assessed the amount of employee's networking outside one's own organisation (Bozionelos, 2003) refers to the extensiveness of an employee's ties with individuals outside one's own organisation. Respondents rated on a five-point scale ranging from: (1) not at all, to (5) to a very large extent. An

example item is: “There are individuals whom I personally know outside the organization I currently work for who occupy important posts in other organizations or in the community.” Both networking scales have been profoundly tested in previous research and appear to have sound psychometric characteristics (Bozionelos, 2003; Van der Heijden *et al.*, 2005).

For the measurement of *employability* 47 items divided across five scales were used: (1) fifteen items for occupational expertise, (2) eight items for anticipation and optimization, (3) eight items for personal flexibility, (4) seven items for corporate sense, and (5) nine items for balance, respectively. All items were scored using six-point rating scales. Examples of items are: “I consider myself competent to indicate when my knowledge is insufficient to perform a task or solve a problem” (occupational expertise); “I’m focused on continuously developing myself (anticipation and optimization)”; “I adapt to developments within my organization” (personal flexibility); “I’m involved in achieving my organization’s/department’s mission (corporate sense)”; and “I suffered from work-related stress (balance)”. Van der Heijde and Van der Heijden (2006) who investigated the psychometric qualities of the instrument (including the discriminant validity of the scales), reported a good predictive validity of the instrument and indicated that the five dimensions of employability are valid and reliable, and explain a significant amount of variance in both objective and subjective career success (see also Van der Heijden, De Lange, Demerouti, and Van der Heijde, resubmitted).

Results

Descriptive Statistics

Table 1 shows the means, standard deviations, reliability coefficients, and correlations between the model variables. As the reliability coefficients demonstrate, all scales can be regarded as internally consistent.

The mean scores on both scales that measured organizational factors (learning climate) indicate that the respondents do not experience severe time constraints, and that they perceive their team as slightly supportive for learning. Our findings regarding formal job-related learning show that,

in the past year, the respondents participated, on average, 3.6 days in training and/or development programmes related to their current job or in adjacent areas, and 3.2 days in training and/or development programmes in other areas, or aimed at a further personal development. However, an accurate inspection of the standard deviations indicates that the amount of participation in formal learning events differed strongly among the respondents.

The means of the informal learning factors indicate that, on average, respondents do not participate in a considerable amount of networks outside their own university. Slightly higher means are observed for the other three informal learning scales, that is to say, interaction with one's supervisor, learning value of the job, and networking within the own organization, respectively.

***** Insert Table 1 about here *****

The mean scores for the five employability scales indicate that the respondents have less positive perceptions of their abilities for anticipation and optimization, and for their personal flexibility, in comparison with the other three employability dimensions, i.e. occupational expertise, corporate sense, and balance.

Test of the Theoretical Model

Our first research question concerns the relationships between formal and informal learning. In order to examine this issue, the specific correlations as displayed in Table 1 need to be taken into account. The pattern of correlations between, on the one hand, the two formal training factors and the four distinguished informal learning factors shows that, in general, the relationships are non-significant. The one exception comprises the relationship between other formal learning and networking outside ones organization ($r = .18, p < .01$). Job-related formal learning appears to correlate significantly with other formal learning activities employees participated in ($r = .43, p < .01$), and all informal learning factors appear to correlate significantly with one another (see Table 1 for more information). All in all, our findings suggest that the relationship between formal and informal learning is not substantial.

In addition, regression analyses and One-way ANOVA tests (Norušis, 1993) have been performed to explore links between employee characteristics and organizational factors, on the one hand, and formal and informal learning, on the other hand. The results of the regression analyses are depicted in Table 2. As regards the employee characteristics, only gender and age appears to be significant predictors. Prior education appears not to contribute to the explanation of the variance in formal and informal learning. Being married/co-habiting seems to be significantly positively related to the learning value of the job, while having a part-time contract is significantly negatively related to the latter. Both working part-time and job tenure are negatively related to networking outside one's organization. The analyses as regards the organizational factors (learning climate) show some interesting outcomes. Especially the amount of time for learning appears to be of relevance in this regard.

One-way ANOVA tests examine the variability of the observations within each group as well as the variability between the group means. The employee's department and job position were used as independent variables in order to better understand the impact of one's organizational context (see the methodology section for more specific information) upon the amount of learning factors. As regards the analyses for the effect of *department*, we have found significant differences for three informal learning factors: (1) interaction with one's supervisor, (2) learning value of the job, and (3) networking outside the organisation, respectively. Respondents working at central departments (bureau of the university) or at educational research and consultancy departments appear to have slightly higher scores for learning value of the job ($F = 3.00$, $df\ 214$, $p = .03$). Respondents working at the service centre or at the ICT department rated relatively higher leader-member exchange scores ($F = 5.61$, $df\ 214$, $p = .00$). Moreover, higher ratings for networking outside the organisation were observed for respondents with jobs at central departments (bureau of the university) or at educational research and consultancy departments ($F = 3.37$, $df\ 214$, $p = .03$).

As far as *job position* is concerned, we have only found a significant relationship with learning value of the job ($F = 3.42$, $df\ 214$, $p = .00$). Respondents working in student support jobs depict significant lower scores for learning value compared with respondents in other job positions.

In order to test our research model regarding the effects of formal and informal learning on employability, hierarchical regression analyses have been performed. Gender, age, educational qualification, marital status (single versus married/co-habiting), job tenure, and job contract (full-time versus part-time) were entered in step one (employee characteristics), followed by the variables that measured aspects of the organizational learning climate in step two, and formal and informal learning in step three. The results of the regression analyses are displayed in Table 3.

***** Insert Table 3 about here *****

The results of our hierarchical regression analyses show significant outcomes, both for formal and informal learning. With regard to formal learning, our findings show that job-related formal learning is significantly related to three dimensions of employability: occupational expertise, anticipation and optimisation, and corporate sense, while other formal learning factors appear not to be significantly related to any of the five employability dimensions.

As regards informal learning, networking, in particular, appears to be important in the light of employability. Four employability dimensions (occupational expertise, personal flexibility, corporate sense, and balance) appear to be related to networking within one's own organisation, while anticipation and optimisation appears to be the only dimension that is significantly predicted by the amount of networking outside one's own university. Interaction with one's supervisor (leader-member exchange) is significantly related to corporate sense, and balance, while learning value of the job appears to be only significantly related to the amount of employees' occupational expertise. The distinguished formal and informal learning factors together contribute considerably to the explanation of the variance in the five employability dimensions (see Table 3, Step 3 ΔR^2 for the separate dimensions of employability).

With regard to the control factors that have been included in the regression analyses our findings show that having a full-time contract is positively related to four of the five employability dimensions. Anticipation and optimisation is the only dimension that is not significantly related to

type of job contract. As regards the learning climate subscales, (lack) of time appears to be the most important factor in the light of one's employability enhancement.

Conclusions and discussion

Reflection upon our Outcomes

The first research question in this study concerned the relationships between formal and informal learning. Our findings (with one exception) have not demonstrated a significant link between the two, which implies that formal and informal learning are in fact two separate phenomena. However, our findings as regards the interrelationships between the distinguished factors measuring informal learning indicate that their scores are positively associated with one another.

Further analyses showed that, while weak to modest, some of the employee characteristics and learning climate (organizational factor) are related to formal and informal learning. Yet, none of them appeared to be related to formal job-related learning. Our findings indicate that female employees experience less high-quality relationships with their supervisors, and that part-time employees perceive a lower learning value of their job, and participate less in networking activities outside the university. This outcome is not surprising as it is a common observation that full-time employees experience more possibilities to maintain extra-organizational contacts. Apparently, the amount of participation in informal learning strongly resembles the participation pattern in formal training opportunities. More specifically, training opportunities are, in general, more frequently offered to males and full-time employees.

Moreover, the amount of perceived informal learning appeared to be dependent upon the department where the employee works. This outcome is important as it seems that, for the non-academic university staff, employability enhancement activities are unequally divided across organizational units (departments), and consequently, some employees might not fully exploit their career potential by means of informal learning opportunities. As far as job position is concerned, we

have only found that employees working in student support jobs depict significant lower scores for learning value compared with respondents in the other job positions

No evidence was found for the existence of the well-known Mathew Principle (McCracken and Winterton, 2006, pp. 56-58) indicating that employees with higher levels of prior education are expected to more frequently participate in formal training and development programmes, or to possess job positions with higher levels of informal learning opportunities (Skule, 2004).

Looking at the impact of formal and informal learning on employability we have found mixed results. Job-related formal learning, interaction with one's supervisor, and networking within the organisation appeared to be the main predictors of employability. The significance of the supervisor for one's further career development has been demonstrated previously in various studies (see for example Van der Klink *et al.*, 2001). The impact of networking activities on employability emphasizes the importance to consider learning and development as a highly social process wherein interactions with key figures in one's professional network are strong catalysts. The absence of significant outcomes as regards the learning value of the job is quite remarkable since many studies point at its value in the light of one's further professional development (see for example Onstenk, 1997; Van der Heijden *et al.*, 2005; Van der Heijden and Bakker, resubmitted).

A possible explanation could lie in the fact that most of our respondents appeared to work for many years in the same job position, which makes it more likely that the job itself does not provide much triggers for learning and development any more (see also Boerlijst *et al.*, 1993). For these employees it is more likely that the interaction with their supervisor or the involvement in networking activities encourage their further learning and development. Somehow these findings are alarming as next to high-quality relationships between employees and supervisors, and networking opportunities, one should provide ample possibilities to build up new knowledge and skills in the job itself. Especially, as the so-called 'half life' of job qualifications is becoming increasingly shorter, workers who are able to survive and satisfy the current labour market needs are the ones with not only the most up-to-date knowledge and skills, but also the capability to continuously build up the new expertise requirements.

Our findings allow the conclusion that employability is encouraged by a mix of formal and informal learning. It is therefore not advisable to restrict learning either to formal training and development programmes or to participation in informal learning opportunities. When it comes to maintaining or increasing employability, it is not in the interest of employees to rely solely on increasing knowledge and skills pertaining to their current job. Similarly, Human Resource Development strategies that focus exclusively on enhancing informal on-the-job learning should neither be encouraged.

Our findings indicate that even within one organizational setting, in our case the Open University of the Netherlands, departments differ significantly according to the amount of *informal* learning opportunities that are provided, and thus in safeguarding employees' future employability. Obviously, the amount and quality of informal learning is strongly related to the character of one's job, but there is no doubt that it is also highly dependent upon the efforts that are undertaken by those staff members in working organizations that are responsible for HRD and HRM policies and actions.

Limitations and Recommendations for Further Research

The present study has some limitations. Firstly, all data have been collected using survey research opening up the possibility of response set consistencies. Secondly, all data have been collected at one point in time, that is, the study is cross-sectional. This implies that further research, preferably using Structural Equation Modeling (SEM) techniques, is needed in order to address issues of causality. Research using multi-wave designs can provide more specific information about the stability and change of the variables, and about cross-lagged (i.e. over time) relationships than our cross-sectional approach (De Lange, 2005; Taris and Kompier, 2003).

Thirdly, this study used an objective measure to assess formal training and development activities, and subjective ones to measure informal learning activities. For job-related formal learning, the total amount of training and development (over the past year) in the employee's current job area, or in adjacent areas was aggregated, while for other formal learning the amount of training days in other areas or related to one's further personal development, in general, were taken into account. Measuring informal learning is much more difficult, since employees are not always aware of their

informal learning experiences. Our questionnaire measured the conditions that encourage informal learning but it did not capture the actual amount of informal learning experiences employees were engaged in, neither the applicability thereof. For further insights into actual informal learning experiences face-to-face interviews with employees allowing them to recall their informal learning experiences, are expected to provide additional valuable information.

Fourthly, further research is needed to investigate the extent to which our findings can be generalized to other occupational settings and/or to other countries. We think that our results are noteworthy and provide good challenges for future research and cross-validation in different settings and cross-culturally. In order to further increase the validity of the outcomes, employees' self-assessments and supervisor assessments of employability ought to be combined in future research. The disagreement between supervisors and employees on the employability dimensions is indicative of the difficulty of evaluating employability (Van der Heijde and Van der Heijden, 2006). Van der Heijden (2000) suggested to use think-aloud protocols aimed at explaining why a rater gives a particular rating to a particular item. This technique will possibly increase the validity of the instrument, albeit at the expense of the scales' homogeneity. If raters are asked to give concrete examples of performances or behaviours of the employees, response sets, such as for instance the halo effect, will probably be sifted out, at least partly. If raters have to justify their ratings and are encouraged to think more carefully about their answers, the differentiation between item meanings will probably increase, leading to a further increase in valid outcomes.

Work organizations change rapidly and individual employees are more and more urged to find out which new knowledge and skills are required in order to adapt and to stay in a desired job. It is hard to understand why, in a period of a huge shortage of many professionals, their employability is so badly guided (Van der Heijden, 2005). After all, it is not only the amount of respect and recognition, of employees by the management team that is at stake here. Many of the respondents in our sample reported that their job is, in many circumstances, highly demanding, and thus immediately endangers their future employability in case formal and informal learning resources are lacking.

References

- Adler, P.S., and Kwon, S. (2002), Social capital: Prospects for a new concept, *Academy of Management Review*, 27, 17-40.
- Amabile, T.M., Conti, R., Coon, H., Lazenby, J., and Herron, M. (1996), Assessing the work environment for creativity, *Academy of Management Journal*, 39, 1154-1184.
- Arthur, M.B. (2008), Examining contemporary careers: A call for interdisciplinary inquiry, *Human Relations*, 61(2), 163-186.
- Ashton, D.N. (2004), The impact of organisational structure and practices on learning in the workplace, *International Journal of Training and Development*, 8, 43-53.
- Bakker, A.B., and Demerouti, E. (2007), The Job Demands-Resources model: State of the art, *Journal of Managerial Psychology*, 22, 309-328.
- Baitsch, C. (1998), *Viele tun's und keiner merkt's. Vom privaten Lernen für die Arbeitswelt* [Many do and nobody notices. From private learning for the business world]. QUEM-report, 52, 13-20.
- Baldwin, T.T. and Ford, J.K. (1988), Transfer of training: A review and directions for future research. *Personnel Psychology*, 41, 63-105.
- Bartram, D., Foster, J., and Lindley, P.A. (1993), *Learning Climate Questionnaire (LCQ): Background and technical information*. Employment Service and Newland Park Associates Limited.
- Basu, R. (1991), An empirical examination of Leader-Member Exchange and transformational leadership as predictors of innovative behavior, unpublished PhD thesis, Purdue University.
- Basu, R., and Green, S.G. (1995), Subordinate performance, leader-subordinate compatibility, and exchange quality in leader-member dyads: A field study, *Journal of Applied Social Psychology*, 25, 77-92.
- Basu, R., and Green, S.G. (1997), Leader-Member Exchange and transformational leadership: An empirical examination of innovative behaviors in leader-member dyads, *Journal of Applied Social Psychology*, 27, 477-499.

- Bergmann, B., Fritsch, A., Göpfert, P., Richter, F., Wardajan, B., and Wilczek, S. (2000). *Kompetenzentwicklung und Berufsarbeit* [Development of competencies and occupational work]. Münster: Waxmann Verlag.
- Berings, M.G.M.C., and Poell, R.F. (2005), Measuring on-the-job learning styles: A critique of three widely used questionnaires, *British Journal of Occupational Learning*, 3, 3-12.
- Billett, S. (2002), Workplace pedagogic practices: Co-participation and learning, *British Journal of Educational Studies*, 50, 457-481.
- Boerlijst, J.G., Van der Heijden, B.I.J.M., and Van Assen, A. (1993), *Veertig-plussers in de onderneming* [Over-forties in the organization]. Assen, the Netherlands: Van Gorcum/Stichting Management Studies.
- Borghans, L., Golsteyn B., and De Grip A. (2006), *Meer werken is meer leren. Determinanten van kennisontwikkeling* [More working is more learning. Determinants of knowledge developments]. Den Bosch, the Netherlands: CINOP.
- Bozionelos, N. (2003), Intra-organizational network resources: Relation to career success and personality, *International Journal of Organizational Analysis*, 11, 41-66.
- Bozionelos, N. (2006), Mentoring and expressive network resources: their relationship with career success and emotional exhaustion among Hellenes employees involved in emotion work, *The International Journal of Human Resource Management*, 17(2), 362-378.
- Brousseau, K.R. (1978), Personality and job experience, *Organizational Behavior and Human Decision Processes*, 22, 235-252.
- Burt, R.S. (1997), The contingent value of social capital, *Administrative Science Quarterly*, 42, 339-365.
- Campbell, D.J. (2000), The proactive employee: Managing workplace initiative, *The Academy of Management Executive*, 14, 52-66.
- Cannings, K. (1988a), The earnings of female and male managers: a Canadian case study, *Journal of Human Resources*, 23, 34-56.
- Cannings, K. (1988b), Managerial promotion: the effects of socialization, specialization and gender, *Industrial and Labor Relations Review*, 42, 77-78.

- Coleman, J.S. (1988), Social capital in the creation of human capital, In *Organizations and institutions: Sociological and economic approaches to the analysis of social structure* eds. C. Winship and S. Rosen, Chicago: University of Chicago Press, pp. 95-120.
- De Lange, A.H. (2005), What about causality? Examining longitudinal relations between work characteristics and mental health, unpublished Ph.D. dissertation, Radboud University Nijmegen, The Netherlands.
- Eby, L.T., Butts, M., and Lockwood, A. (2003), Predictors of success in the era of the boundaryless career, *Journal of Organizational Behavior*, 24(6), 689-708.
- El-Sawad, A., Ackers, P., and Cohen, L. (2006), Critical perspectives on careers and family-friendly policies: Introduction to the symposium, *British Journal of Guidance and Counselling*, 34, 273-278.
- Eraut, M. (2004), Informal learning in the workplace, *Studies in Continuing Education*, 26, 247-273.
- Fay, D., and Frese, M. (2001), The concept of personal initiative: An overview of validity studies, *Human Performance*, 14, 97-124.
- Fay, D., and Kamps, A. (2006), Work characteristics and the emergence of a sustainable workforce: Do job design principles matter?, *Gedrag and Organisatie*, 19, 184-203.
- Forrier, A., and Sels, L. (2003), The concept employability: A complex mosaic, *International Journal of Human Resources Development and Management*, 3, 102-124.
- Fugate, M., Kinicki, A.J., and Ashforth, B.E. (2004), Employability A psycho-social construct, its dimensions, and applications, *Journal of Vocational Behavior*, 65, 14-38.
- Fuller, A., and Unwin, L. (2005), Older and wiser?: workplace learning from the perspective of experienced employees, *International Journal of Lifelong Education*, 24, 21-39.
- Gerstner, C.R., and Day, D.V. (1997), Meta-analytic review of Leader-Member Exchange Theory: Correlates and construct issues, *Journal of Applied Psychology*, 82, 827-844.
- Gould, S., and Penley, L.E. (1984), Career strategies and salary progression: a study of their relationships in a municipal bureaucracy, *Organizational Behavior and Human Performance*, 34, 244-265.

- Graen, G.B., and Uhl-Bien, M. (1995), Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective, *Leadership Quarterly*, 6, 219-247.
- Higgins, M.C., and Kram, K.E. (2001), Reconceptualizing mentoring at work: A developmental network perspective, *Academy of Management Review*, 26, 264-288.
- Holman, D., and Epitropaki, O. (2001), Understanding learning experiences in the workplace: A factor analytic investigation, *Journal of Occupational and Organizational Psychology*, 74, 675-681.
- Howell, J.M., and Hall-Meranda, K.E. (1999), The ties that bind: The impact of leader-member exchange, transformational and transactional leadership, and distance on predicting follower performance, *Journal of Applied Psychology*, 84, 650-694.
- Hughes, C. (2004), The supervisor's influence on workplace learning, *Studies in Continuing Education*, 26, 275-287.
- Inkson, K., Khapova, S., and Parker, P. (2007), Careers in cross-cultural perspective, *Career Development International*, 12(1), 5-8.
- Jenewein, K., Knauth, P., and Zülch, G. (2002). *Kompetenzentwicklung in Unternehmensprozessen* [Development of competencies in business processes]. Aachen, Germany: Shaker Verlag.
- Kohn, M.L., and Schooler, C. (1982), Job conditions and personality: A longitudinal assessment of their reciprocal effects, *American Journal of Sociology*, 87, 1257-1283.
- Koopmans, H., Doornbos, A., and Van Eekelen, I. (2006), Learning in interactive work situations: It takes two to tango; why not invite both partners to dance?, *Human Resource Development Quarterly*, 17, 135-158.
- Lave, J., and Wenger, E. (1991), *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.
- Legge, K. (1995), *Human Resource management; rhetorics and realities*. London: Macmillan Business.

- Leitner, K. (1993), Auswirkungen von Arbeitsbedingungen auf die Psychosoziale Gesundheit [The effects of working conditions on psychosocial health]. *Zeitschrift für Arbeitswissenschaft*, 47, 98-107.
- Leong, F.T.L., and Hartung, P. (2000), Adapting to the changing multicultural context of career, In: A. Collin and R.A. Young (Eds.), *The future of career*. Cambridge: Cambridge University Press.
- Liden, R.C., and Graen, G. (1980), Generalizability of the Vertical Dyad Linkage model of Leadership, *Academy of Management Journal*, 23, 451-465.
- Liden, R.C., Sparrowe, R. T., and Wayne, S.J. (1997), Leader-Member Exchange theory: The past and potential for the future, *Research in Personnel and Human Resources Management*, 15, 47-119.
- Liden, R.C., Wayne, S.J., and Stilwell, D. (1993), A longitudinal study on the early development of leader-member exchanges, *Journal of Applied Psychology*, 78, 662-674.
- Livingstone, D.W., and Eichler, M. (2005), Mapping the field of lifelong (formal and informal) learning and (paid and unpaid) work, Joint keynote at the *Future of lifelong learning and work international conference*, Toronto, June 20th, 2005.
- Lohman, M.C. (2005), A survey of factors influencing the engagement of two professional groups in informal workplace learning activities, *Human Resource Development Quarterly*, 16, 501-527.
- Maurer, T.J., Weiss, E.M., and Barbeite, F.G. (2003), A model of involvement in work-related learning and development activity: The effects of individual, situational, motivational, and age variables, *Journal of Applied Psychology*, 88, 707-724.
- Marsick, V. (2006), Informal strategic learning in the workplace, in *Work-related learning*, ed. J.N. Streumer, Dordrecht/New York: Springer, pp. 51-69.
- Marsick, V., and Volpe, F.M. (1999), Informal learning on the job, *Advances in developing human resources*, 1, 5-8.
- Mayrhofer, W., Meyer, M., Iellatchitch, A., and Schiffinger, M. (2004), Careers and human resource management – a European perspective, *Human Resource Management Review*, 14, 473-498.

- McCracken, J., and Winterton, J. (2006), What about the managers? Contradictions between lifelong learning and management development, *International Journal of Training and Development*, 10, 55-66.
- Norušis, M.J. (1993), *SPSS for Windows. Base System User's Guide. Release 6.0*, Chicago, Ill.: SPSS Inc.
- Olbert-Bock, S. (2002), *Lernprozesse bei Veränderungen in Unternehmen* [Learning processes in companies]. Frankfurt, Germany: Peter Lang Verlag.
- Onstenk, J.H.A.M. (1997), *Lerend leren werken: Brede vakbekwaamheid en de integratie van leren, werken en innoveren* [Learning while working: About competencies and integrating learning, working and innovating], unpublished Ph.D. dissertation, Nijmegen, the Netherlands: Katholieke Universiteit Nijmegen.
- Peluchette, J.V.E. (1993), Subjective career success: the influence of individual difference, family, and organizational variables, *Journal of Vocational Behavior*, 43, 198-208.
- Podolny, J.M., and Baron, J.N. (1997), Relationships and resources: Social networks and mobility in the workplace, *American Sociological Review*, 62, 673-693.
- Pulakos, E.D., Arad, S., Donovan, M.A., and Plamondon, K.E. (2000), Adaptability in the workplace: Development of a taxonomy of adaptive performance, *Journal of Applied Psychology*, 85, 612-624.
- Russell, J.E.A., and Adams, D.M. (1997), The changing nature of mentoring in organizations: an introduction to the special issue on mentoring in organizations, *Journal of Vocational Behavior*, 51, 1-14.
- Scholarios, D., Van der Heijden, B.I.J.M., Van der Schoot, E., Bozionelos, N., Epitropaki, O., Jedrzejowicz, P., Knauth, P., Marzec, I., Mikkelsen, A., Van der Heijden, C.M., and the Indic@tor Study Group. (2008), Employability and the psychological contract in European ICT sector SMEs, *International Journal of Human Resource Management*, 19(6), 1035-1055.
- Seibert, S.E., Kraimer, M.L., and Crant, J.M. (2001), What do proactive people do? A longitudinal model linking proactive personality and career success, *Personnel Psychology*, 54, 845-874.

- Seibert, S.E., Kraimer, M.L., and Liden, R.C. (2001), A social capital theory of career success, *Academy of Management Journal*, 44, 219-237.
- Skule, S. (2004), Learning conditions at work: a framework to understand and assess informal learning in the workplace, *International Journal of Training and Development*, 8, 8-20.
- Spieß, E.; Geldermann, B., Hofmann, H., and Woschée, R. (2002), “Unterschiede zwischen Lernkulturen in Unternehmen – Erste Ergebnisse einer empirischen Studie zu neuen Lernkulturen in Unternehmen“ [Differences between learning cultures in companies – First outcomes of an empirical study on learning cultures in companies], in: *Kompetenzentwicklung in Unternehmensprozessen*, eds. K. Jenewein, P.Knauth and G. Zülch, Aachen, Germany: Shaker-Verlag: pp. 197-200.
- Stead, G. (2004), Culture and career psychology: A social constructionist perspective, *Journal of Vocational Behavior*, 64, 389-406.
- Taris, T.W., and Kompier, M. (2003), Challenges of longitudinal designs in occupational health psychology, *Scandinavian Journal of Work, Environment and Health*, 29, 1-4.
- Van der Heijde, C.M., and Van der Heijden, B.I.J.M. (2006), A competency-based and multidimensional operationalization and measurement of employability, *Human Resource Management*, 45, 449-476.
- Van der Heijden, B.I.J.M. (2000), The development and psychometric evaluation of a multidimensional measurement instrument of professional expertise, *High Ability Studies*, 11, 9-39.
- Van der Heijden, B.I.J.M. (2005), *No one has ever promised you a rose garden. On shared responsibility and employability enhancing strategies throughout career*, inaugural address, Assen, The Netherlands: Van Gorcum.
- Van der Heijden, B.I.J.M., and Bakker, A.A. (under review), Towards a model of employability enhancement.
- Van der Heijden, B.I.J.M., De Lange, A.H., Demerouti, E., and Van der Heijden, C.M. (resubmitted), Employability and career success across the life-span.

- Van der Heijden, B.I.J.M., Scholarios, D., Bozionelos, N., Van der Heijde, C.M., Epitropaki, O., and the Indic@tor consortium (2005), *Report on final results. Indic@tor Report: A cross-cultural study on the measurement and enhancement of employability in small and medium-sized ICT-companies*, Brussels: European Commission.
- Van der Heijden, B., Van der Klink, M., and Meijs, E. (2006), *Verslag van een onderzoek naar de employability van medewerkers van de Open Universiteit Nederland* [Research report on the employability of Open University staff members], Heerlen, The Netherlands: Open Universiteit Nederland.
- Van der Klink, M.R., Gielen, E., and Nauta, C. (2001), Supervisory support as a major condition to enhance transfer, *International Journal of Training and Development*, 5, 52-63.
- Van der Klink, M.R., and Streumer, J.N. (2002), Effectiveness of on-the-job training, *Journal of European Industrial Training*, 26, 196-199.
- Wayne, S.J., and Green, S.A. (1993), The effects of Leader-Member Exchange on employee citizenship and impression management behavior, *Human Relations*, 46, 1431-1440.

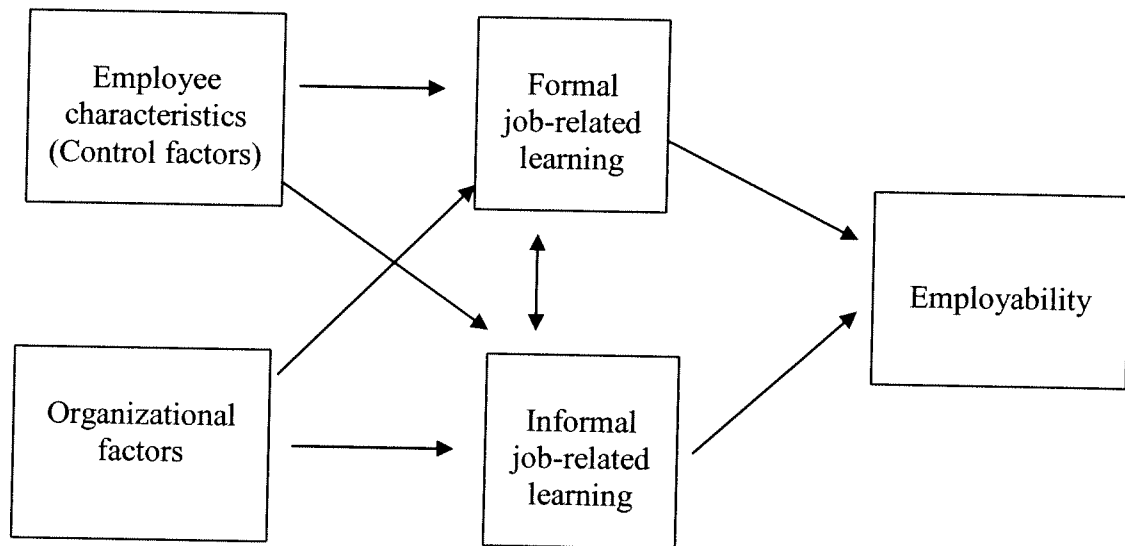


Figure 1: Theoretical Framework

Table 1: Means, Standard deviations, Reliability Coefficients (Cronbach's Alpha; on the Diagonal), and Correlations between the Model Variables,
N = 215

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
<i>Organizational context factors</i>														
1 Learning climate- lack of time	2.74	.63	.88											
2 Learning climate – team support	3.40	.57	-.39**	.84										
<i>Formal learning</i>														
3 Formal job- related learning	3.66	2.04	.03	.05	-									
4 Other formal learning	3.22	2.08	.14*	.03	.43**	-								
<i>Informal learning</i>														
5 Interaction with one's supervisor	3.48	.86	-.33**	.44**	.10	.00	.93							
6 Learning value of the job	3.87	1.12	.13	-.04	.16	-.02	.16*	.89						
7 Networking within own organization	3.14	.78	.01	.12	.08	.07	.27**	.40**	.84					
8 Networking outside own organization	2.27	.90	-.01	.04	.08	.18**	.21**	.27**	.52**	.89				
<i>Employability</i>														
9 Occupational expertise	4.73	.54	-.26**	.00	.14*	.01	.19**	-.02	.20**	.17*	.93			
10 Anticipation and	3.50	.75	-.01	.03	.31**	.15	.15*	.23**	.15*	.29**	.39**	.83		

optimization														
11 Personal flexibility	3.80	.80	-.09	.13	.17*	.04	.13	.03	.20**	.19**	.58**	.47**	.81	
12 Corporate sense	4.42	.54	-.13	.03	.14*	.06	.13	.24**	.48**	.33**	.45**	.46**	.50**	.83
13 Balance	4.10	.64	-.42**	.32**	.07	-.06	.39**	.09	.26**	.14**	.43**	.28**	.44**	.43**

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Table 2. Hierarchical Regression Analyses (method enter) using Employee Characteristics and Organizational Context Factors as Predictors, and Formal and Informal Learning as Dependents^a

Predictors	Dependents					
	Formal job-related learning	Other formal learning	Interaction with supervisor	Learning value job	Network within organization	Network outside organization
Gender	-.03	-.08	-.20**	-.08	-.07	-.06
Age	-.02	.16*	-.02	-.14	-.21**	.05
Middle educ. level	.08	.17	.05	.12	-.02	.03
Higher educ. level	-.07	.02	.12	.07	-.01	.09
Acad. educ. level	.08	.02	.05	.17	.05	.17
Marital status (single versus married/co-habiting)	.00	-.06	.01	.15*	-.01	.02
Job tenure	-.03	-.04	-.01	.09	.02	-.17*
Job contract (full-time versus part-	-.08	-.07	.00	-.22**	-.14	-.17*

time)						
Learning						
climate-time	.06	.18*	-.19**	.15*	.05	.01
Learning						
climate-team	.07	.09	.39**	.01	.12	.06
R ²	.04	.08	.28	.14	.09	.09

^aStandardized regression coefficients (Beta) ** Significant at the .01 level; * significant at the .05 level

Table 3. Hierarchical Regression Analyses using Employee Characteristics, Organizational Context Factors, Formal and Informal Learning as Predictors, and Employability Dimensions as Dependents

Predictors	Dependents				
	Occupational expertise	Anticipation and Optimisation	Personal flexibility	Corporate sense	Balance
<i>Step 1</i>					
Gender	-.04	-0.9	-.22**	-.11	-.13*
Age	.06	-0.3	.03	.19**	-.03
Middle educational level	-.02	.03	.03	-.02	-.16
Higher educational level	.10	.12	.11	.05	-.07
Acad. educational level	.03	.03	.06	.07	-.09
Marital Status (single versus married/co-habiting)	.03	.07	.15*	.13*	.10
Job tenure	.02	-.12	-.19*	-.17*	-.08
Job contract (full-time versus part-time)	-.17*	-.09	-.24**	-.27**	-.12*
<i>Step 2</i>					
Learning climate-time	-.27**	-.03	-.15*	-.02	-.31**
Learning climate-team	-.18**	-.06	-.14	-.01	.06
<i>Step 3</i>					
Formal job-related learning	.17*	.27**	.14	.13*	.07
Other formal learning	-.05	.01	-.01	-.06	-.05
Interaction with one's supervisor	.12	.08	.08	.22**	.21**
Learning value of the job	-.17*	.14	-.10	-.03	.02
Networking within own organisation	.20*	-.08	.16*	.41**	.18*
Networking outside own organisation	.06	.23**	.06	.01	-.01
<i>Model summary</i>					
Step 1 ΔR^2	.04	.05	.08	.11	.06

Step 2 ΔR^2	.08	.02	.05	.04	.19
Step 3 ΔR^2	.09	.16	.06	.24	.08
Full model R^2	.21	.23	.20	.39	.34
Overall F	3.2**	3.8**	2.9**	7.9**	6.2**
a. Standardized regression coefficients (Beta) shown for the <i>last</i> step in the regression			b. * $p < .05$ ** $p < .01$		

